

## **Historic, archived document**

Do not assume content reflects current scientific knowledge, policies, or practices.



# American Holly

(*Ilex opaca*)

By H. S. BETTS, senior engineer, Division of Forest Products

American holly is a small- to medium-sized, rather slow-growing tree scattered sparsely through the forests of the Southeastern States and northward along the Atlantic coast almost to Maine. In New England it is often classed as a shrub. Farther south the size increases, and in the Gulf States the tree frequently reaches a height of 40 feet and a diameter of 18 inches. The wood of American holly is heavy and hard, has a close uniform texture, and works up well with tools. It is white or ivory white in color and is used in limited quantities for a number of exacting products such as measuring scales and rules, toy ships, parts of musical instruments, and inlay work.

Small branches or sprays of American holly with their brilliant red berries and glossy green leaves have long been used for Christmas decorations, and the wide use of the foliage during the Christmas season far outweighs in importance (commercial and otherwise) the comparatively small amount of the wood used in the manufacture of various products. There is decided need, however, for less destructive methods in collecting Christmas holly if a continuous crop is to be maintained.

**Nomenclature.**—American holly is commonly known simply as holly in the region of its growth. Less frequently it is called white holly, evergreen holly, and boxwood.

**Distribution and growth.**—The natural range of growth of holly extends from the coast of Massachusetts southward to central Florida and westward to Oklahoma and central Texas, except in the higher elevations in the mountains of West Virginia and nearby States (fig. 1).

Holly grows scattered sparsely through the forests, in mixture with other species. It reaches its largest size and is most abundant on the bottom lands of Louisiana and the adjoining States. Here trees 40 to 50 feet high with a trunk 2 to 3 feet in diameter are not uncommon. Such trees may be 100 years old. Exceptional specimens have been reported 80 feet high and 4 feet in diameter. Farther north holly decreases in size and finally becomes a shrub.

---

---

Forest Service

U. S. DEPARTMENT OF AGRICULTURE

American Woods

August 1945

The tree grows rather slowly in the forest, especially in the northern parts of its range, but slow growth is often due in part to its being overtopped by competing species. Its ability to endure shade, however, enables the tree to continue to grow under such conditions. In plantations, where holly is being grown for Christmas greens or to sell as an ornamental shrub, and where growth conditions are optimum, some plants may reach a height of 8 or 10 feet in 12 to 20 years.

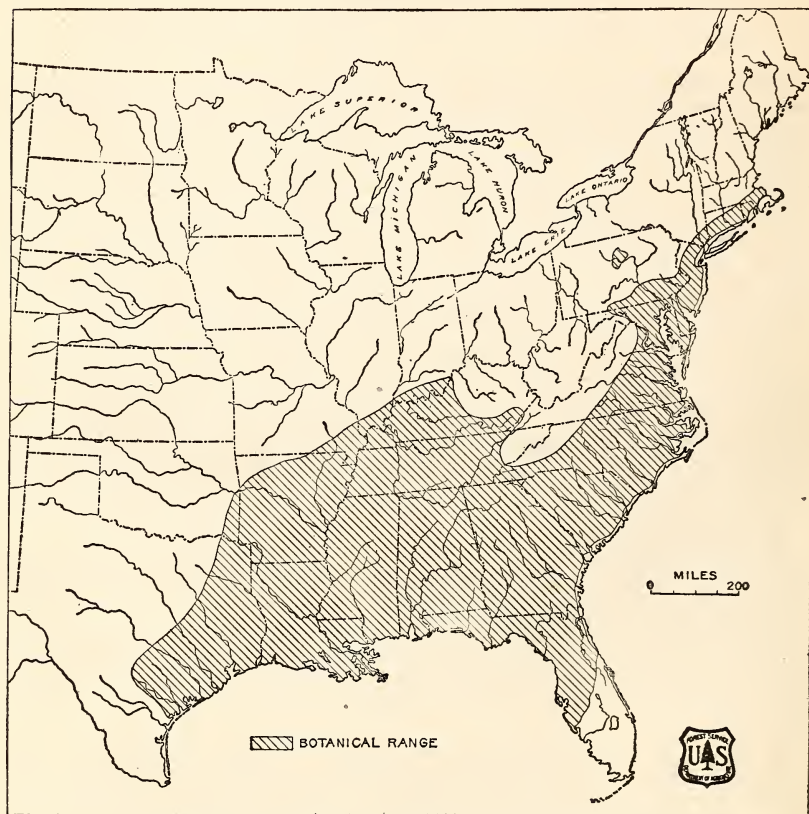


FIGURE 1.—Range of American holly (*Ilex opaca*).

Forest-grown trees are reproduced by seed which is contained in the red berries for which holly is famous. Birds eat the berries and distribute the seed.

The thin bark is very susceptible to injury by fire, and the leaves (both green and dry) burn readily. Even light fires may kill the whole tree or at least a considerable portion of the lower branches.

Destructive methods of collecting holly branches at Christmas time have killed or seriously injured a large proportion of the readily accessible trees in the northern portions of its range, but there is now widespread public sentiment against this destructive harvesting. The growing of cultivated or wild holly on farms as a supplement to

other farm crops and an added source of income is being given increasing consideration. The culture of American holly is already being practiced to some extent in the Southeast.<sup>1</sup>

**Production.**—Records of the annual production of holly lumber are available for only occasional years and are probably much too low. This is on account of the difficulty of securing complete returns on a species frequently sawed into lumber at small portable mills whose production records are often difficult to obtain, and also because holly is sometimes shipped in log or bolt form directly to plants that make finished wooden products<sup>2</sup> and does not go to sawmills at all. During the period 1907<sup>3</sup>–41 holly lumber production was reported in 14 of the 35 years. The minimum cut occurred in 1907 and in 1937. In each of these years 2,000 board feet was reported. The maximum was 51,000 board feet in 1938. It is quite probable that the average annual cut of holly for all purposes in recent years has been at least 50,000 board feet.

**Supply.**—No information on which to base a reliable estimate of the stand of holly is available. It is believed that the widely scattered stand amounts to at least 5 million board feet. If the annual cut is taken as 50,000 board feet, the assumed supply would last 100 years with no allowance being made, on the one hand, for new growth or, on the other hand, for the destruction of trees (both young and old) for Christmas decorations.

**Properties.**—The heartwood of holly is a distinctive ivory white in color. The wide sapwood is also white but lacks the ivory tinge of the heartwood; the wood has a uniform and compact texture. Green lumber has a large shrinkage and requires care in the drying operation if checking and warping are to be avoided. When once properly seasoned, however, it stays in place well. Green lumber is very subject to attack by fungi which stain the wood a pale blue. To insure freedom from this stain it is necessary to season the lumber promptly or to give it a dip or spray treatment with some effective antistain solution.

The wood is heavy,<sup>4</sup> hard, moderately weak when used as a beam or column, not stiff, and ranks high in ability to resist shock. Holly has the reputation of lacking durability when exposed to conditions favorable to decay but is seldom used for purposes where durability is a factor. It is readily permeable to liquids and can be satisfactorily dyed. The wood works well with tools, and cut surfaces are smooth and free from chipped or fuzzy grain.

**Principal uses.**—Holly wood is used principally for scientific instruments, toy boats, furniture inlays, sporting and athletic goods, and musical instruments. Formerly it was used in comparatively large quantities for woodenware and novelties and for handles, especially brush backs. The even-textured, compact white wood has long been used as an inlay for high-grade furniture and Pullman car finish. Its

<sup>1</sup> English holly (*Ilex aquifolium*) was successfully introduced into this country several years ago in the neighborhood of Puget Sound in the State of Washington where the climate is favorable to its culture. English holly produces more berries than the American species.

<sup>2</sup> Logs sent to such plants are not reported in the lumber production statistics obtained from sawmills. It is probable that such logs make up a considerable proportion of the holly cut.

<sup>3</sup> The earliest year for which the production of holly lumber was reported.

<sup>4</sup> The average weight of holly in an air-dry condition (12 percent moisture) is 40 pounds per cubic foot.



use for scientific instruments, especially measuring scales and rules of various kinds, is also due to its texture which closely resembles that of boxwood—a wood considered standard for scales but increasingly difficult to obtain in recent years. In musical instruments holly is employed for inlay and for piano keys. For the latter purpose it is often dyed jet black and substituted for ebony.

The collection of wild holly branches to sell for Christmas decorations has long been a business of considerable size. On the eastern shore of Maryland alone it is estimated that some 10,000 people engage in harvesting holly each winter and that about 10,000 boxes of holly foliage are shipped annually from that locality.<sup>5</sup>

Table 1 shows the amounts of holly used in the manufacture of wooden products in 1912, 1928, 1933, and 1940. It includes holly in the form of lumber, logs, and veneer.

TABLE 1.—*Holly used in the manufacture of wooden products*

Classes of products	1912	1928	1933	1940
	<i>Board feet</i>	<i>Board feet</i>	<i>Board feet</i>	<i>Board feet</i>
Fixtures.....			1,000	
Furniture.....	100	1,000	2,000	2,000
General millwork.....	500	1,000		
Handles.....	21,000	2,000	1,000	
Instruments, musical.....	3,580	8,000		1,000
Instruments, professional, and scientific.....				4,000
Radio and phonograph cabinets.....		15,000		
Sporting and athletic goods.....	1,500	5,000		2,000
Toys (boats).....				5,000
Woodenware and novelties.....	60,000			
Total.....	86,680	32,000	4,000	14,000

## REFERENCES

- AMERICAN FOREST TREES. H. H. GIBSON. 708 pp., illus. 1913.  
 COMMERCIAL TIMBERS OF THE UNITED STATES. H. P. BROWN and A. J. PANSIN. 554 pp., illus. 1940.  
 GROWING CHRISTMAS HOLLY ON THE FARM. P. COVILLE. U. S. Dept. Agr. Farmers' Bul. 1693, 22 pp., illus. 1932.  
 KNOWING YOUR TREES. G. H. COLLINGWOOD. Amer. Forest Assoc. 109 pp., illus. 1937.  
 LUMBER USED IN MANUFACTURE—1928, 1933, AND 1940. (Summary Tables) U. S. Forest Service, preliminary statistics—Forest Survey of the United States.  
 LUMBER USED IN THE MANUFACTURE OF WOODEN PRODUCTS. J. C. NELLIS. U. S. Dept. Agr. Bul. 605, 18 pp., illus. 1918.  
 MANUAL OF THE TREES OF NORTH AMERICA. C. S. SARGENT. 826 pp., illus. 1905. Boston and New York.  
 THE SOUTHERN HARDWOODS—MISCELLANEOUS (HOLLY). SOUTH. LUMBERMAN 163 (2047) : 31. 1941.

<sup>5</sup> COVILLE, P. GROWING CHRISTMAS HOLLY ON THE FARM. U. S. Dept. Agr. Farmers' Bul. 1693, 22 pp., illus. 1932